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THE WEST AMERICAN MOLLUSKS OF THE GENUS ACAR

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MOLLUSKS OF THE GENUS ACAR

Five top figures, *Acar gradata;* five middle figures, *A. bailyi*, new species; five bottom figures, *A. panamensis*, new species.

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A recent inquiry by Prof. Joshua L. Baily, who is revising Keep's "West Coast Shells," regarding the status of *Arca gradata* in California made it necessary to subject the members of this group to a critical examination; the results thereof are noted herein. The change of concept here expressed is due in part to the splendid series of specimens that we secured on the cruise of the United States Bureau of Fisheries steamer *Albatross* in its explorations of the waters of Lower California and the Gulf of California in 1911 and in part to the contributions of many correspondents, both in the United States and in the regions to the south, that have enriched the collection of the National Museum sufficiently to clear up some doubtful problems.

First of all, I believe that *Acar*, which was proposed by Dr. J. E. Gray in 1857[1] as a subdivision of the genus *Barbatia*, is entitled to generic rank. The curiously elevated smooth muscle scars combined with the peculiar shape and sculpture make it a compact unit group, rather widely distributed in warm waters.

Gray, in defining *Acar* (loc. cit.), mentions three species, namely, *Byssoarca reticulata*, *B. divaricata*, and *B. gradata*, without designating a type. A type designation seems not to have been made until 1925, when Dr. Wendell P. Woodring[2] selected *Arca gradata* Broderip and Sowerby for that purpose.

The genus *Acar* in the east Pacific ranges from southern California to Peru, where it is represented by a number of species whose distribution coincides quite well with the faunal areas as at present conceived.

[1] Ann. Mag. Nat. Hist., ser. 2, vol. 19, p. 369, 1857.

[2] Miocene mollusks from Bowden, Jamaica, pt. 1, Carnegie Inst. Washington Publ. no. 366, p. 36, 1925.

ACAR BAILYI, new species

PLATE 1, five central figures

Shell small, rhomboidal, rather inflated, white, with a buffy tinge. The tips of the umbones are at the posterior extremity of the anterior fourth of the shell. The umbones are strongly curved and separated only by a narrow space. The cardinal area is narrow and marked by a few slender incised lines, which parallel the hinge margin. The anterior margin of the shell is well rounded. The posterior margin is less strongly rounded and somewhat produced at the junction of the posterior and ventral border. The sculpture of the exterior consists of numerous radiating cords, of which 9 occur on the anterior portion and 13 upon the posterior part, while 23 are present on the middle. In addition to the radiating cords, which increase in strength from the umbone toward the ventral margin, the valves are marked by concentric lamina, which render the cords tuberculated. The anterior ventral and posterior borders of the valves are rendered wavy by the external sculpture at the edge. The interior of the shell is white with a buffy tinge, particularly so in the umbonal region. The muscle scars are large, smooth, and decidedly elevated. The teeth of the hinge are few, 8 being present in the anterior group, which slope anteriorly, and 10 in the posterior group, which slope posteriorly. The central of these tooth groups are mere dots, and they increase in size in both directions as shown in our figure.

Type.—U.S.N.M. No. 382474 is an adult specimen collected by A. M. Strong under stones at Balboa, Calif. It measures: Length, 8.8 mm.; height, 4.9 mm.; diameter, 4.5 mm. U.S.N.M. No. 347810 contains 48 topotypes received from the same source; U.S.N.M. No. 74831 contains 11 specimens from San Diego, Calif., from the Stearns collection, and U.S.N.M. No. 74830 contains 3 specimens from San Diego, collected by Henry Hemphill; U.S.N.M. No. 63302 contains 4 specimens collected by Doctor Dall; U.S.N.M. No. 127242 contains 2 specimens collected by Mrs. Oldroyd.

Remarks.—This species was named in our collection *Arca gradata* Broderip and Sowerby, and *Fossularca solida* Sowerby. From the first it can at once be distinguished by its size. A glance at our figure will also give other distinguishing characters, and from *Fossularca solida* Sowerby by its entirely different ligamental structure.

ACAR GRADATA (Broderip and Sowerby)

PLATE 1, five top figures

1829. *Arca gradata* BRODERIP and SOWERBY, Zool. Journ., no. 15, pp. 365–366.

Shell moderately large, white with yellowish tinge, rhomboidal with the umbones about opposite the anterior third of the shell.

The umbones are fairly closely approximated and leave only a narrow marginal area between them, which is marked by a few fine lines paralleling the margin of the hinge. The anterior end is strongly rounded and the posterior somewhat produced ventrally. The surface of the shell is marked by radiating, closely approximated, slender cords, of which at least 15 are present on the anterior end and 21 on the posterior area, and 48 in the middle part. In addition to these cords the valves are marked by concentric lamina, which render the cords nodulose. The sculpture is best visualized by consulting our figures. Interior of shell white, with a buffy tinge. The anterior, posterior, and ventral margins are rendered denticulated by the external sculpture. The hinge teeth are small in the center and increase in size toward either extremity, becoming somewhat irregular toward the extremities. In the main the anterior slope anteriorly and the posterior posteriorly, but the early posterior teeth have a somewhat triangular shape, while the anterior ones are somewhat irregular. Both of them increase in size from the median portion outward. Fourteen appear to be present both in the anterior and posterior half of the hinge in the specimen figured. The muscle scars are large, smooth, and strongly elevated.

We have many specimens of this species, which seems to range through the entire Mazatlanic faunal area, and also appears to extend up on the outer coast of Lower California to Point Abreojos. The specimen that I have figured is one of a small series from Mazatlán, the type locality.

Type.—U.S.N.M. No. 382428. It measures: Length, 23.8 mm.; height, 12.7 mm.; diameter, 12.6 mm.

Remarks.—Sowerby says that "this elaborately ornamented shell looks at first sight like a piece of Chinese carving. From Mazatlán."

This species resembles most nearly the Panama forms as far as size is concerned. It differs from them, however, in having the sculpture much finer in every way.

ACAR PANAMENSIS, new species

PLATE 1, five bottom figures

Shell moderately large, rather inflated, white with a buffy tinge, strongly rounded anteriorly, somewhat produced at the posterior ventral margin. The umbones are well approximated, leaving only a narrow cardinal area, which is marked by incised lines parallel to the margin of the hinge. The exterior of the valves is marked by strong radiating cords, of which 11 are present on the anterior part, 15 on the posterior part, and 39 in the middle portion. The posterior part forms a decided angle where it passes into the sides. The anterior and posterior borders of the valves are rendered finely denticu-

lated by the external sculpture; the ventral margin a little less so. The hinge teeth increase in size from the center, both anteriorly and posteriorly, and promptly bend anteriorly in the anterior portion and posteriorly in the posterior portion. There are 12 teeth in the anterior and 18 in the posterior half; they increase in strength from the center outward. The muscle scars are very prominent, smooth, and elevated.

Type.—U.S.N.M. No. 74827, the specimen figured, comes from Panama, and measures: Length, 24.2 mm.; height, 12.2 mm.; diameter, 13.4 mm.

Remarks.—This species may be the shell figured by Reeve on Plate 14, figure 92, of his Conchologia Iconica in 1844. He says it was collected by Cuming, who found it attached to stones at St. Elena, West Colombia (Ecuador). The figure certainly resembles our species, which is easily distinguished from the Mazatlanic shell by its much coarser sculpture.

In addition to the above, our collection contains other specimens from Panama, the Galapagos Islands, and one valve from Manta, Ecuador.

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